Defense Acquisition University

A premier corporate university serving DoD Acquisition, Technology, and Logistic

PBL Business Case Analysis

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PBL
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Agenda

- BCA Model
  - Content
  - Development
- PBL BCA Specifics
- PBL BCA Summary and Conclusions
- References

What is a BCA ?

- Until recently, BCA was not a common term in DoD - but routine in the business world.
  - In DoD, we usually do: "*economic analysis; cost/benefit analysis; cost of ownership analysis; analysis of alternatives*"
- A BCA is an extended form of cost/benefit analysis that assesses:
  1. An alternatives' total costs for satisfying a business need weighed against the alternatives' total benefits to determine an optimum solution
  2. BUT ALSO ADDRESSES qualitative and subjective factors directly impacting the decision-making process, along with risk and sensitivity analysis

What is a BCA ?

- The output of a BCA is an analysis of viable alternative business strategies, along with recommendations for proceeding with the best value alternative
- HOWEVER…DoD is BUDGET-DRIVEN, so if it doesn't make sense from a cost perspective, it's going to be a hard sell

Why Create a Business Case ?

Well, because we have to...

- 1999 NDAA section 346
  - DoD must notify Congress if a “Prime Vendor” contract that includes depot level maintenance or repair on a weapon system is pursued; requires an “analysis of costs and benefits”
- ★USD/ATL 23 Jan 2004 Memo
  - ★BCAs to be used to “assess changes from existing support strategies for legacy systems and to support the product support strategy for new weapon systems”
- ★2004 Strategic Programming Guidance
  - Requires the Services to complete a BCA by 30 Sep 06 on all *Fielded* ACAT I and II programs for application of PBL

And Because We Need To…

- The focus is on achievement of a ‘best value’ support strategy
- To achieve best value, we need to assess many factors regarding where, how, and by whom workload can best be accomplished
- Those factors fall into three primary categories
  - Statutory: Title 10 U.S.C.
  - Policy: OSD and Service policy

And Because We Need To…

- And…
  - Best Value: Best use of public/private sector capabilities considering:
    - Existing support infrastructure, skills base, and capacity
    - Competencies and constraints
    - Uniqueness and/or commonality of workloads
    - Life cycle phase
    - Operational mission

The BCA serves as a critical decision tool in arriving at the best value answer with a complex, comprehensive range of mandatory, desired, and other criteria

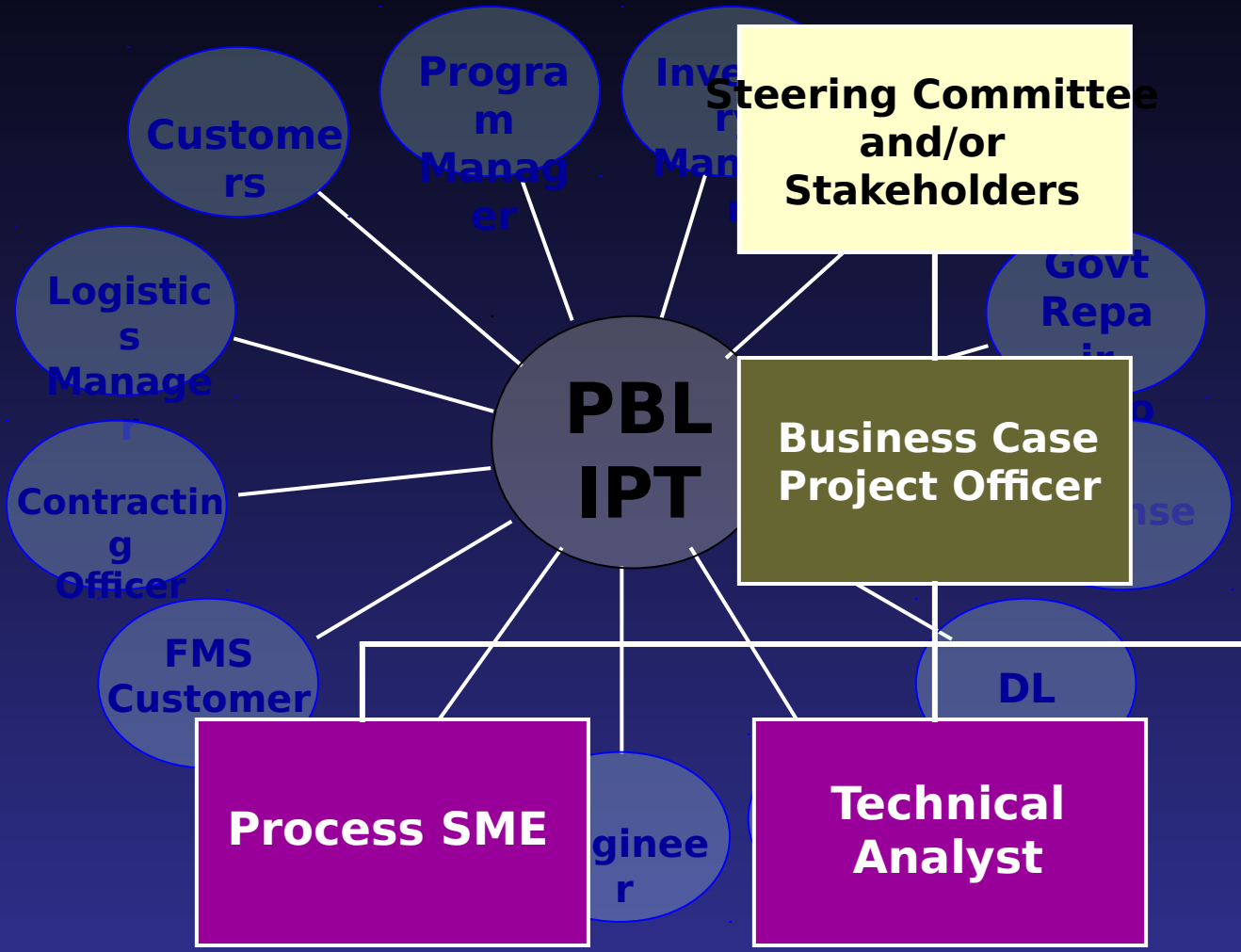
OK, So How Do I Prepare a BCA?

1. Establish Scope, Baseline, Alternatives, and Assumptions
2. Complete Cost Estimates
3. Conduct Sensitivity Analysis
4. Accomplish Risk Assessments
5. Analyze Business Impacts
6. Conclusion and Recommendations

Where you are now	**Your Alternatives for where you want to be**	**A considered analysis of those Alternatives**	**The Recommended Alternative – and WHY**

"It Takes a Village…"

OK…a TEAM



BCA Structure

roduction

dentify Subject, Purpose, Scope, Baseline, Alternatives, and Objectives of the B

thods and Assumptions

Specify analysis methods and rationale (what costs, what estimating methods, and whose benefits)
Specify Ground Rules and Assumptions (GR&A)
- - List filtering criteria (Statutory; Policy): "No or Few Option Constraints"; Title 10, etc.

siness Impacts: Analysis/comparison of alternative solutions against baseline

Define current baseline (as basis for comparison of alternatives)
Cost estimates: Analysis of baseline vs. alternatives in COST terms
Non-financial analysis: Analysis of all non-financial factors; baseline vs. alternatives)

nsitivity and Risks

dentify Risk Categories, Risk Metrics, and Risk Level with rationale
Conduct Sensitivity Analysis: how results depend on, or react to changes in, important ssumptions ("what if")
isk Assessment: For each risk category, assign risk metric (low, medium, high), with ration

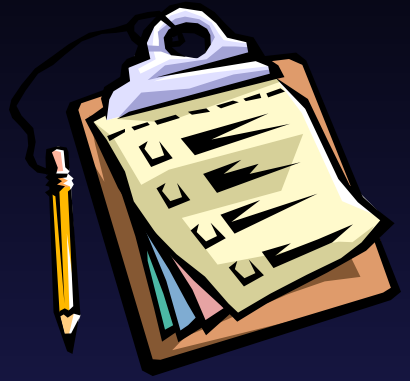
nclusions and Recommendations

ecommend specific actions based on business objectives and the results of the analysis.

Sample BCA Format

- xecutive Summary
- troduction/Overview
- ubject, Purpose, Scope, Baseline, and Objectives
- ackground
- rganization

Introduction



- ajor Assumptions and Constraints
- nancial Metrics Used and Defined
- nalysis Methodology
- he Cost and Benefit Model Used
- (Explanation of Cost Types and Categories)

Methods and Assumptions

- escription of Baseline
- escription of Alternatives
- osts and Benefits Over Time
- nancial Analysis
- on-quantitative Factors, Criteria, and Rationale for Their Use
- omparison of Alternatives (quantitative and qualitative)

Business Impacts

- ensitivity Analysis
- sk Analysis

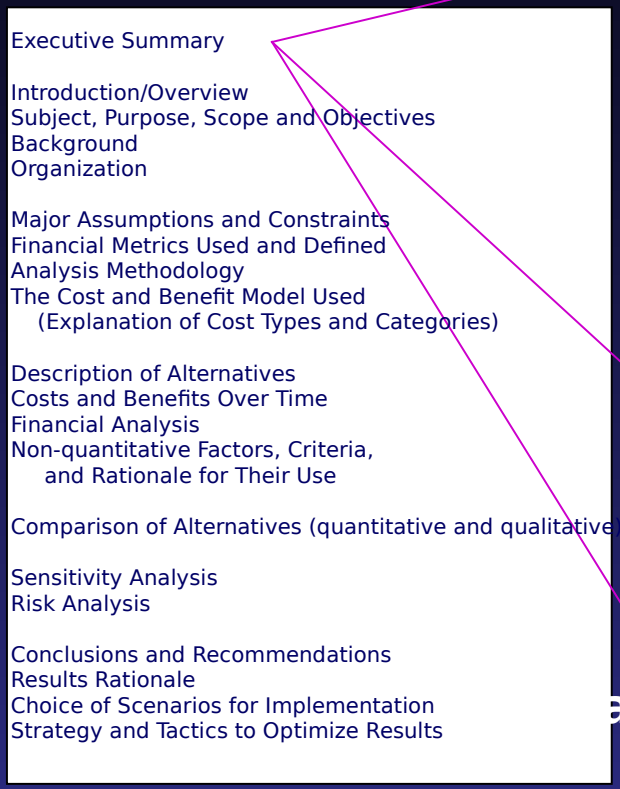
Sensitivity and Risks

- onclusions and Recommendations
- esults Rationale
- cenarios and POA&M for Implementation
- rategy and Tactics to Optimize Results

Conclusions & Recommendations

From: "The Business Case Guide"; by Dr. Marty J. Schmidt, Solution Matrix, Ltd; 2002

Building the BCA (continued)



The best *executive summaries* contain the whole case in miniature (be BRIEF!):

- **subject, purpose, scope, baseline summary**
- **important objectives addressed**
- **key financial results**
- **significant non-financial impacts**
- **major assumptions that control results**
- **sensitivity and risk considerations**
- **conclusion and recommendations**

All conveyed succinctly

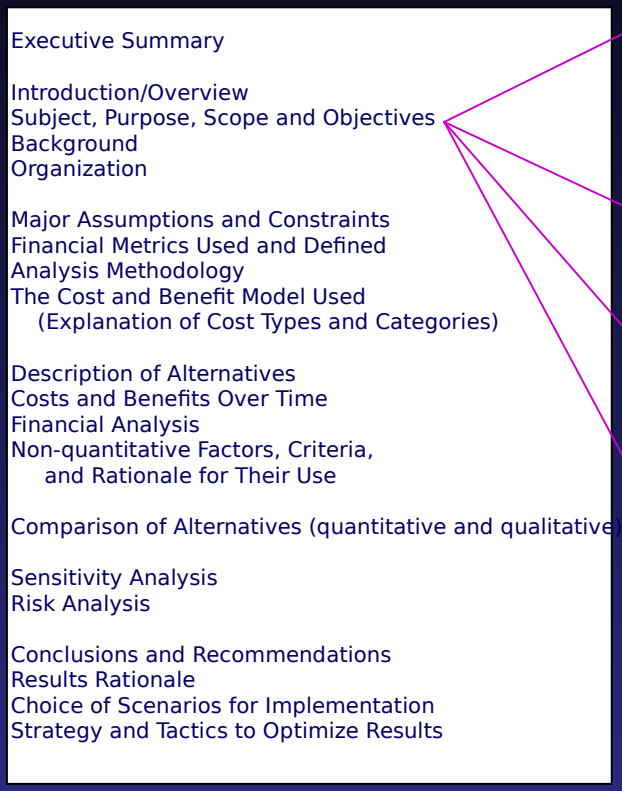
- **It should not be more than 1 - 2 pages**
- **It comes first in the BCA, but is written last.**

ays a key role in the way recipients judge a case.

It deserves careful writing

- some recipients will *only* read the executive summary.

Building the BCA (continued)



Subject: **Every case needs an explicit subject statement describing what the case is about. it helps shape or define everything else in the case.**

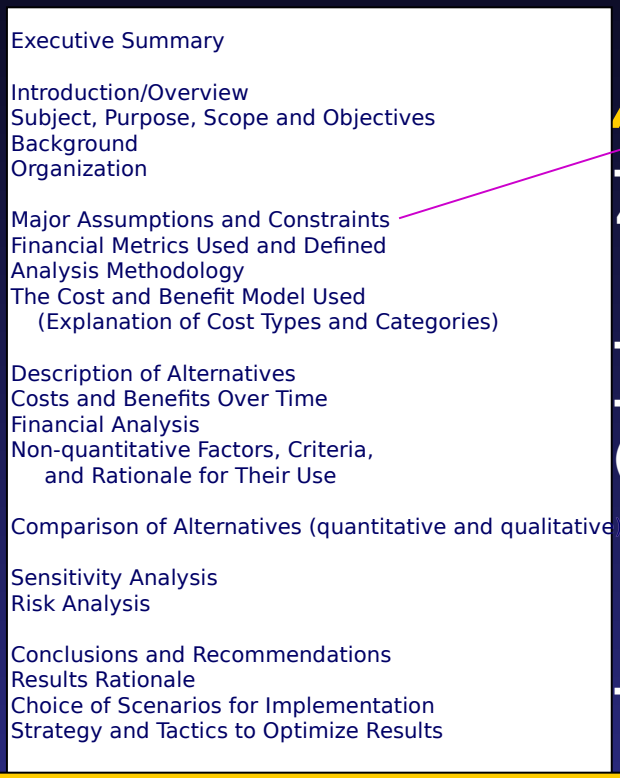
***Purpose*: The reader must know specifically what the case will be used for; how it will be used; and who (agency) it's being done for.**

Baseline Summary: **What is your starting point Summarizing the baseline provides a point of reference for the reader.**

Objectives **describe the desired end state**

- **regardless if the status quo remains, or is replaced by another alternative**
- ***Objectives*** **are the reason for considering a decision in the first place.**

Building the BCA (continued)



Assumptions

- Not everything is "known"; there will always b
"assumptions"
- **About future events, costs, other info**

- Assumptions predict, simplify or clarify
- Often termed "Ground Rules and Assumptions"
(GR&A), they lay the foundation for
- **WHERE you have made assumptions**
- **WHY you made assumptions**
- **the BASIS for your assumptions**

- Must be acceptable to a 'reasonable' reader
- **Self-evident**
- **ically sound**
- **ed on accepted models or methods**
- **itively make sense**

Examples
- ***Financial (budget, growth)***
- ***Operational (OPTEMPO)***
- ***Contract (term)***

Building the BCA (continued)

Executive Summary

Introduction/Overview
Subject, Purpose, Scope and Objectives
Background
Organization

Major Assumptions and Constraints
Financial Metrics Used and Defined
Analysis Methodology
The Cost and Benefit Model Used
(Explanation of Cost Types and Categories)

Description of Alternatives
Costs and Benefits Over Time
Financial Analysis
Non-quantitative Factors, Criteria,
and Rationale for Their Use

Comparison of Alternatives (quantitative and qualitative)

Sensitivity Analysis
Risk Analysis

Conclusions and Recommendations
Results Rationale
Choice of Scenarios for Implementation
Strategy and Tactics to Optimize Results

Financial metrics used and defined

- **Net Present Value (NPV)**
- **Benefit/Cost Ratio**
- **Payback Period**
- **Break Even Point**
- **Return on Investment (ROI)**
- **Internal Rate of Return (IRR)**
- **Total Cost of Ownership (TOC)**
- **Time Value of Money Considerations:**
  =Current or constant dollars (base year)
  =Discounted dollars

There are universally accepted methods of how financial data should be represented – they ensure clarity and understanding of your analysis

Building the BCA (continued)

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What type of cost/benefit model is used?

- it describes how to read the spreadsheet, not necessarily the spreadsheet itself

• Assures the case includes all relevant line items, and only relevant line items
• An organized list of cost and/or benefit items, usually arranged in cells
• TAILORED to the scope and purpose of the BCA (e.g. will DIFFER from BCA to BCA)

	FY02	FY03	FY04	FY05
Direct Costs				
Indirect Costs				
G & A				
Other Direct Costs				

	FY04			
	R & D	Procurement	O & S	Disposal
Hardware				
Software				
Personnel				
Facilities				

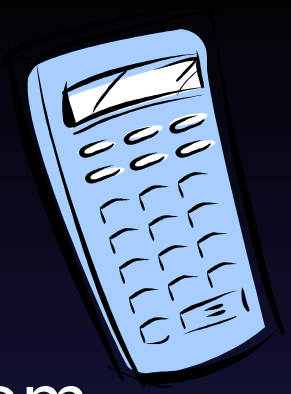
"Predictions are always difficult – especially when they're about the future" Niels Bohr

Fundamentals of Cost Estimating

Approximating the probable worth of an activity based on information available at the time

Valuable Resource!!
OSD CAIG O&S Cost Estimating Guide
http://dcarc.pae.osd.mil/osd_ces/index.html

Estimating Types



- Parametric, or “Top Down”
  - Most suitable in early stages of system development when information is not readily available – useful for ROM estimates
  - Relies on a Cost Estimating Relationship (CER)
    - Example: Cost per Flight Hour of similar or predecessor system
    - Multiplied by expected Flight Hours of new/replacement system
    - Other CERs (notional): Cost Per Pound, Cost Per Mile, etc.

Estimating Types, cont.

- Estimating by Analogy
  - Costs of a similar system are used as a starting point…
  - Then adjusted for differences between the two systems
  - A good starting baseline must exist

- Bottom Up Estimating
  - Uses a building block approach
  - Used when there is extensive data about the system
  - Much information is needed; not useful early in the program life-cycle
  - The BEST choice if sufficient data is available

Cost Estimating Quiz

- Your uncle has a 2003 Jeep Wrangler 2WD, 4 cylinder, with a complete history of maintenance costs
- You are considering buying a new 2005 Jeep Wrangler 4WD, 6 cylinder, and want to estimate your annual maintenance costs
- What Estimating Method would you use – Parametric, [illegible]ottom Up? Why?

Cost Estimate Objectives

- Your objective is to compare "Apples with Apples", not "Apples with Oranges"
- HOWEVER, you will inevitably have options with different cost timelines
- In order to do an accurate cost comparison, you must:
  - 'Normalize' data in both category and representation
    - **Categories**
      - To normalize across categories, accomplish a comprehensive Work Breakdown Structure (aka Estimating Breakdown Structure)
      - the EBS identifies all pertinent categories in which cost or non-cost assessments will be made
    - **Representation**
      - To normalize in terms of representation, you must convert dissimilar values to "Constant Year Dollars"

Estimating Breakdown Structure

- Identify discrete functional cost elements, e.g.
  - Personnel
  - Training
  - Maintenance
  - Supply
  - Non-recurring costs
  - Etc.

- The objective is to identify elements that:
  - Have clearly identifiable and available associated costs
  - Are common among all alternatives

Normalizing Cost Data

- Use Constant Year Dollars
  - Constant Year Dollars are simply raw cost data adjusted for the effects of inflation
  - You first select a BASE YEAR (e.g. $CY05). All OTHER YEAR cost values will be adjusted to be equivalent to this base year by applying INFLATION indices – in other words, they well be DEFLATED.
  - Example: Your cost data reflects $100 in CY05 and $105 in CY07
    - Your inflation indices reflect an inflation factor of 5% for CY07
    - You would DEFLATE the CY07 amount of $105 by 5%
    - Resulting in a CONSTANT DOLLAR value of $100!

Converting Current Dollars to Constant Dollars

	FY05	FY06	FY07	FY08
Current $	$100	$103	$105	$112
Inflation Indices	0%	4%	5%	7%
Constant $	$100	$99	$100	$104

Normalizing Cost Data - NPV

- Now that you have “Apples to Apples” cost data, you must compare the true cost benefits of differing alternatives
- Compare Costs of Alternatives using Net Present Value (NPV) calculations
  - *A dollar today is worth more than a dollar in the future – why?*
  - *Because: 1) The current dollar value is CERTAIN - not an estimate or forecast, and 2) I can INVEST today’s dollar*
- Net Present Value
  - The value of future earnings in “today's money”
  - Calculated by applying a **discount rate** % to future earnings
  - The further out the earnings are (in years) the more reduced the net present value (future year $$ have less value than Current $$)
- NPV allows you to consider the relative time difference benefits of ROI and cash flow, allowing you to identify which alternative is “TRULY” LEAST COST

Dynamics of Present Value

For a Discount Rate of 10%

Period	System A Net Cash Flow	System A Present Value	System B Net Cash Flow	System B Present Value
Now	($100)	($100)	($100)	($100)
Year 1	$60	$54.54	$20	$18.18
Year 2	$60	$49.59	$20	$16.52
Year 3	$40	$30.05	$40	$30.05
Year 4	$20	$13.70	$60	$41.10
Year 5	$20	$12.42	$60	$37.27
Total	+$100	NPV = +$60.30	+$100	NPV = +$43.12

Higher ROI Earlier!

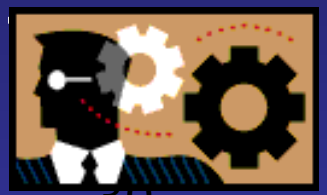
$$\text{Year 1 Present Value} = \frac{\text{(Future Value)}}{\text{1.0 + Int. Rate (0.1)}} = \frac{}{1.1}$$

$$\text{Year 3 Present Value} = \frac{\text{(Future Value)}}{\text{(1.0 + Int. Rate)}^{n}} = \frac{}{(1.1)^{3}}$$

Assessing Objective and Subjective Criteria Against Alternatives

Making Subjective Assessments

- The future is uncertain; Even ‘quantifiable’ values (i.e. costs) are subject to ‘educated guesses’
- In addition, other objective data is open to subjective assessments
  - Risk (Likelihood of an event happening; Degree of impact if it does happen)
  - Sensitivity (WHAT IF assumptions change?)
- How can we make SUBJECTIVE assessments more OBJECTIVE?



Making Subjective Assessments

The PROCESS…

1. Select your evaluation CRITERIA first
2. Weight (prioritize) your criteria
3. Assess each criteria against each ALTERNATIVE
4. Assess QUALITATIVE (Subjective) assessments in OBJECTIVE terms

Sample Weighted Comparison (set-up)

Step 1

Criteria Weights

Alternatives	CRITERIA			Results
	Ease of Implementation *25% of decision*	Availability Rate *60% of decision*	Cost Savings *15% of decision*	
Baseline	The Baseline is 100% in effect now	The Baseline delivers a 65% availability rate	The Baseline saves 0$	
Alternative 1	90%	80%	$9.9M	
Alternative 2	80%	90%	$21.7M	
Alternative 3	40%	90%	$30.4M	
Sub-Totals	100+90+80+40= 310	325	$62 M	

Add the columns

Sample Weighted Comparison (normalize)

Step 2

Alternatives	CRITERIA			Results
	Ease of Implementation 25% of decision	Availability Rate 60% of decision	Cost Savings 15% of decision	
Baseline	100%	65%	0$	
	100/310(.25)=.081	65/325(.6)=.12	0/62(.15)=0	
Alternative 1	90%	80%	$9.9M	
	90/310(.25)=.072	80/325(.6)=.148	9.9/62(.15)=.024	
Alternative 2	80%	90%	$21.7M	
	80/310(.25)=.064	40/325(.6)=.166	21.7/62(.15)=.052	
Alternative 3	40%	90%	$30.4M	
	40/310(.25)=.032	20/325(.6)=.166	30.4/62(.15)=.074	
Sub-Totals	310	325	$62 M	

divide first value by subtotal times weight

Sample Weighted Comparison (results)

Step 3

	CRITERIA				
Alternatives	Ease of Implementation ***25% of decision***	Availability Rate ***60% of decision***	Cost Savings ***15% of decision***	**Results**	
Baseline	**100%** **100/310(.25)=.081**	**65%** **65/325(.6)=.12**	**0$** **0/62(.15)=0**	**.081+.12+0=**	**.201**
Alternative 1	**90%** **90/310(.25)=.078**	**80%** **80/325(.6)=.148**	**$9.9M** **9.9/62(.15)=.024**	**.073+.148+.024=**	**.245**
Alternative 2	**80%** **80/310(.25)=.064**	**90%** **90/325(.6)=.166**	**$21.7M** **21.7/62(.15)=.052**	**.064+.166+.052=**	**.282**
Alternative 3	**40%** **40/310(.25)=.032**	**90%** **90/325(.6)=.166**	**$30.4M** **30.4/62(.15)=.074**	**.032+.166+.074=**	**.272**
Sub-Totals	**310**	**325**	**$62 M**		

Add row column totals = Results

Prioritization Matrices: Pairwise Comparison

	Team Member Rankings						Weighting
Criteria Name	Member 1	Member 2	Member 3	Member 4	Member 5	Member 6	Factor
Cost	3	2	2	3	2	1	0.36
Peacetime Risk	2	1	3	1	1	2	0.28
Wartime Risk	1	3	1	2	3	3	0.36
Criteria D							0.00
Criteria E							0.00
Criteria F							0.00

- Each member ranks importance of each criteria
  - Lowest ranked criteria is given value of “1”
  - Next lowest criteria given a value of “2” etc
- Average rankings derive the weighting factor results

Evaluate Options

Option Comparison Scale

Option Comparison	Option 1 Value	Option 2 Value
Option 1 is extremely favored over option 2	9	1
Option 1 is very strongly favored over option 2	8	2
Option 1 is strongly favored over option 2	7	3
Option 1 is slightly favored over option 2	6	4
Option 1 and 2 are equal	5	5
Option 2 is slightly favored over option 1	4	6
Option 2 is strongly favored over option 1	3	7
Option 2 is very strongly favored over option 1	2	8
Option 2 is extremely favored over option 1	1	9

- Used to [illegible] have already
- A relati[illegible]N is accomp
- Values are assigned per this SCALE to reflect the assessment of EACH OPTION vs. EACH CRITERA
- THIS IS CALLED “Pair Wise Comparison”

Option Selection Example

Selection	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Criteria 6	Total
Criteria Name	Cost	Peacetime Pick	Wartime Pick			.	Weighted Value
Criteria Weighting Factor	0.36	0.28	0.36	0.00	0.00	0.00	
Option 1 Value	7	4	3	0	0	0	
Option 2 Value	3	6	7	0	0	0	
							.
Option 1 Weighted Value	2.53	1.11	1.08	0.00	0.00	0.00	4.72
Option 2 Weighted Value	1.08	1.67	2.53	0.00	0.00	0.00	5.28

CRITERIA

CRITERIA WEIGHTING

PAIR WISE COMPARISON

FINAL RESULTS AND SCORES

Winner!

Prioritization Matrices (> 2 criteria)

Step 1: Ranking the Criteria

COLUMN

ROW

criteria / criteria	Ease of Implementation	Availability Rate	Cost Savings	Row Total (% of grand total)
Ease of Implementation		1/5	1	1.2 (.07)
Availability Rate	5		10	15 (.87)
Cost Savings	1	1/10		1.1 (.06)
Column Total	6	.3	11	17.3

Reciprocal

Row More Important

1 = equally important
5 = significantly more important
10 = exceedingly more important

Column More Important

1/5 = significantly less important
1/10 = exceedingly less important

15 / 17.3 = .87

Prioritization Matrices (cont)

Step 2: Ranking Options by Each Criteria

EASE OF IMPLEMENTATION

option / option	Baseline	BPR	Partnering	CLS	Row Totals (% of Grand Total)
Baseline		5	10	5	20 (.55)
BPR	1/5		5	5	10.2 (.28)
Partnering	1/10	1/5		1/5	.5 (.02)
CLS	1/5	1/5	5		5.4 (.15)
Column Total	.5	5.4	20	10.2	36.1

Row More Important

1 = equal ease
5 = significantly more ease
10 = exceedingly more ease

Column More Important

1/5 = much less ease
1/10 = significantly less ease

Prioritization Matrices (cont)

Step 2: Ranking Options by Each Criteria (cont)

AVAILABILTY

option / option	Baseline	BPR	Partnering	CLS	Row Totals (% of Grand Total)
Baseline		1/5	1/10	1/5	.5 (.01)
BPR	5		1/10	1	6.1 (.16)
Partnering	10	10		5	25 (.66)
CLS	5	1	1/5		6.2 (.17)
Column Total	20	11.2	.4	6.2	37.8

1 = equal availability
5 = significantly more availability
10 = exceedingly more availability

1/5 = much less availability
1/10 = significantly less availability

Prioritization Matrices (cont)

Step 2: Ranking Options by Each Criteria (cont)

COST SAVINGS

option / option	Baseline	BPR	Partnering	CLS	Row Totals (% of Grand Total)
Baseline		1	1/5	1/10	1.3 (.03)
BPR	1		1/5	1/10	1.3 (.03)
Partnering	5	5		1/5	10.2 (.28)
CLS	10	10	5		25 (.66)
Column Total	16	16	5.4	.4	37.8

1 = equal cost savings
5 = significantly more cost savings
10 = exceedingly more cost savings

1/5 = much less cost savings
1/10 = significantly less cost savings

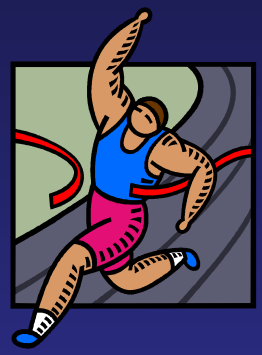
Prioritization Matrices (cont)

Step 3: Ranking Options by All Criteria

Criteria vs. Option **Criteria Weight**

Criteria / option	Ease of Implementation	Availability Rate	Cost Savings	Row Totals (% of Grand Total)
Baseline	(.55) X(.07) .0385	(.01) X(.87) .0087	(.03) X(.06) .0018	.049
BPR	(.28) X(.07) .0196	(.16) X(.87) .1392	(.03 X(.06) .0018	.1606
Partnering	(.02) X(.07) .0014	(.66) X(.87) .5742	(.28) X(.06) .0168	.5924
CLS	(.15) X(.07) .0105	(.17) X(.87) .1479	(.66) X(.06) .0396	.198
Column Total	.07	.87	.06	1.00

THE WINNER !



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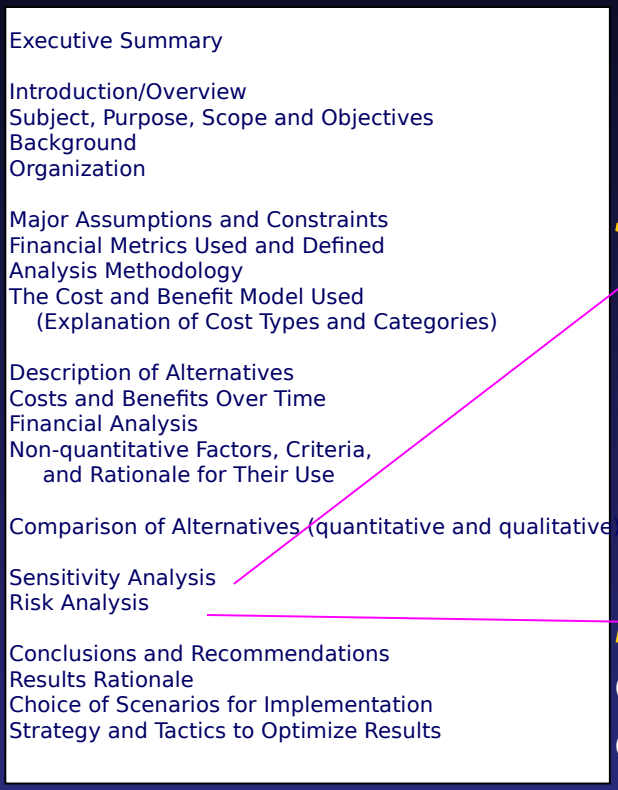
"Rack 'em and Stack 'em"
Comparison of the baseline and alternatives against selection criteria……

Financial comparisons **should attempt to compare like attributes, and summary metrics, like NPV; rate of return; payback period; cost avoidance.**

Non-quantifiable factors**, when possible, should be compared using weighting and/or ranking schemes against common decision criteria:**
- **Convert "subjective" values to "objective" values**
- **Feasibility; ease of implementation**
- **acceptance by customer or workforce**
- **politics and personalities**
- **"gut feel" management dynamics**
- **past performance**

Building the BCA (continued)



Sensitivity analysis **attempts to explain what happens if assumptions change or prove wrong ("what if drills"). How sensitive are your financ model's overall outputs, to changes of individua inputs? If this cost changes, how does it affect t "bottomline"; can be quantitative or qualitative**

Risk analysis **attempts to predict the likelihood of an event occurring, and the impact to the case outcome. For some situations, risk analysis can occupy the most volume and level of effort of the entire business case development; can be quantitative or qualitative.**

Types of Sensitivity Analysis

- **Simple Sensitivity Analysis**

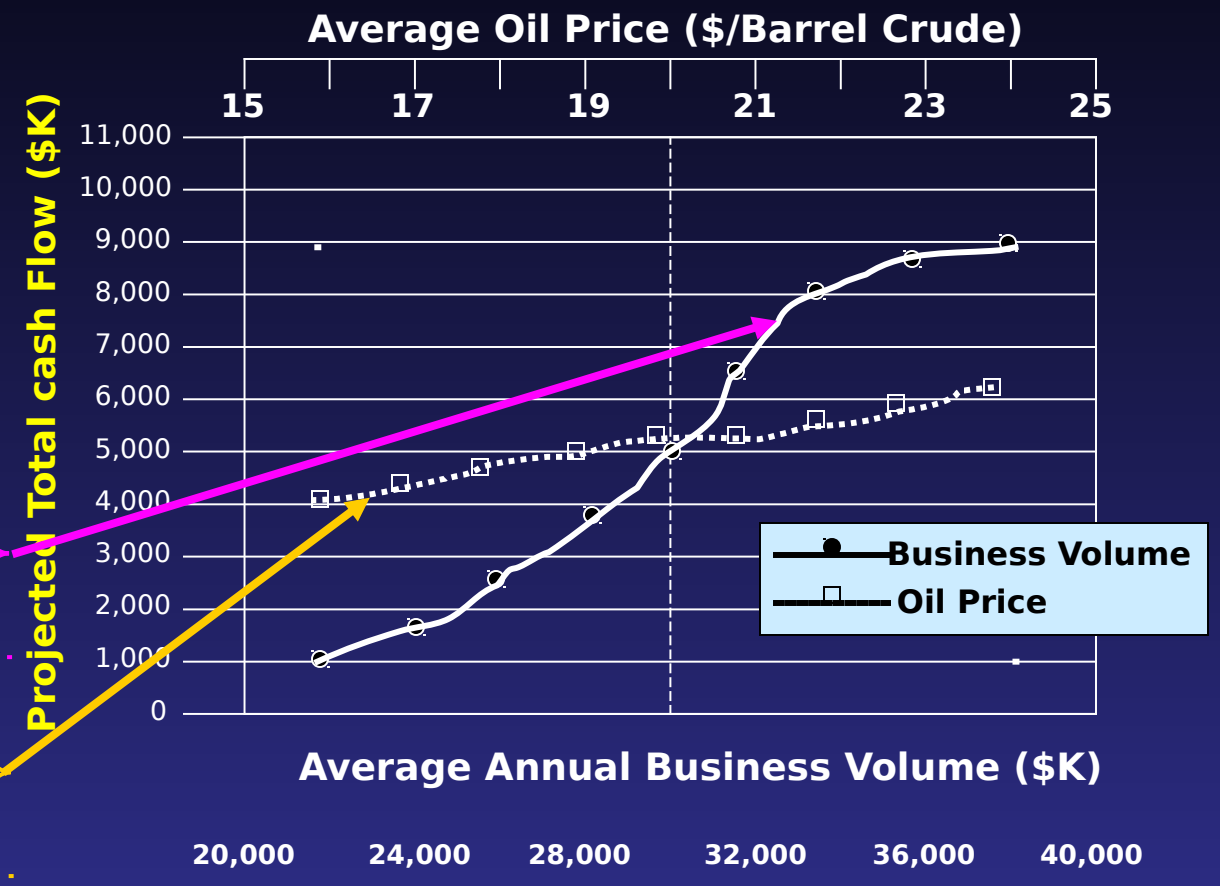
Other analysis methods:

- ***Tornado Diagrams***
- ***(Monte Carlo) Simulations***
- ***Models***

Simple Sensitivity Analysis

- Varying one assumption, while holding all other assumptions constant
- This shows the combined results of such an approach with two assumptions.

- The curves indicate that projected cash flow results (vertical axis) are **sensitive** to changes in **business volume**
- But relatively **insensitive** to changes in **average oil price.**



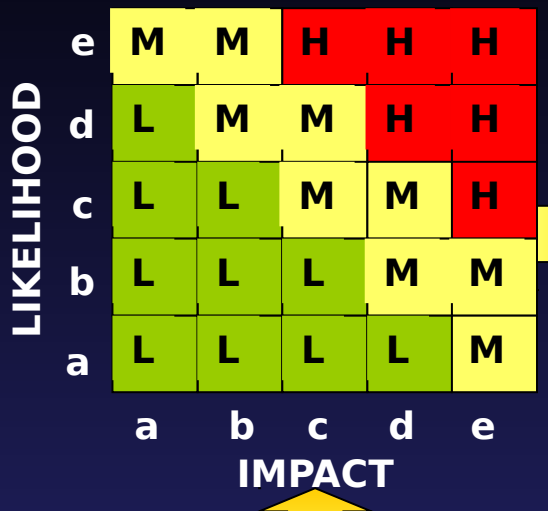
Risk Assessment

- The following areas should be assessed:
  - **Technical Risk**
    - Maturity of technology and processes reliant on technology
  - **Schedule Risk**
    - Any scheduling issues that may impact success?
  - **Funding Risk**
    - Are funds identified for which availability is reliant on pending events or approvals? Have adequate funds been identified?
  - **Traceability Risk**
    - How will claimed cost avoidances be tracked and documented?
  - **Other Risk**
    - Any other risks that have not been addressed above
  - **Risk Summary**
    - Overview of the risk associated with implementing the initiative
    - e.g. “is there adequate service life remaining to justify this change?”

Risk Analysis Model

Level	What is the Likelihood the Risk Event will occur?
a	Remote
b	Unlikely
c	Likely
d	Highly Likely
e	Near Certainty

Assessment Guide



Risk Assessment

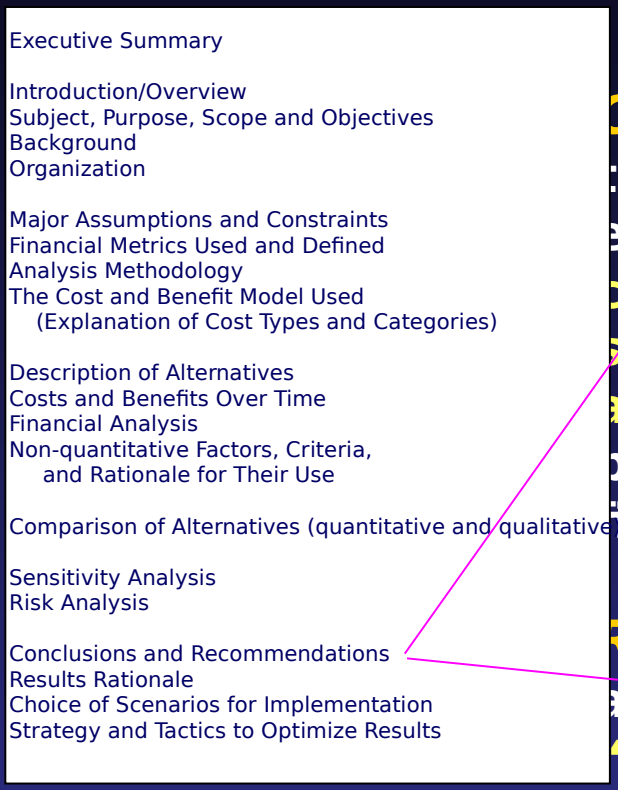
R **HIGH – Unacceptable. Major disruption likely; different approach required; priority management attention required.**

Y **MODERATE – Some disruption; different approach may be required; additional management attention may be needed.**

G **LOW – Minimum impact; minimum oversight needed to ensure risk remains low.**

	Technical Performance	And/or Schedule	And/or Cost	And/or Impact on Other teams
a	**Minimal or no impact**	Minimal or no impact	Minimal or no impact	None
b	**Acceptable with some reduction in margin**	Additional resources required; able to meet need dates	<5%	Some impact
c	**Acceptable with significant reduction in margin**	Minor slip in key milestones; not able to meet all need dates	5-7%	Moderate impact
d	**Acceptable; no remaining margin**	Major slip in key milestone or critical path impacted	7-10%	Major impact
e	**Unacceptable**	Can't achieve key team or major milestone	>10%	Unacceptable

Building the BCA (continued)



Conclusions **should state the complete case tersely, but completely, supporting your evidence from the preceding sections. Effective conclusions are organized around the objectives stated up front in the case. Did the recommende alternative cost less? Was it 'best value'? Also, point out any surprising or unexpected results or findings that could be misinterpreted.**

Recommendations **brings closure to the case and reminds the reader the "ball is in their court "OK boss, what's your decision?" Just like a court case, the business case should provide support your recommendation that a "reasonable person would find compelling.**

Building the BCA (continued)

Executive Summary

Introduction/Overview
Subject, Purpose, Scope and Objectives
Background
Organization

Major Assumptions and Constraints
Financial Metrics Used and Defined
Analysis Methodology
The Cost and Benefit Model Used
(Explanation of Cost Types and Categories)

Description of Alternatives
Costs and Benefits Over Time
Financial Analysis
Non-quantitative Factors, Criteria,
and Rationale for Their Use

Comparison of Alternatives (quantitative and qualitative)

Sensitivity Analysis
Risk Analysis

Conclusions and Recommendations
Results Rationale
Choice of Scenarios for Implementation
Strategy and Tactics to Optimize Results

Put together a basic *Plan of Action and Milestones (POA&M)* to portray how your recommendation becomes realty. This is good "marketing".

Manager's Basic BCA Checklist

- Does the case try to point to a "preordained" decision?
- If subjective factors exist, are they portrayed to show their "value" and contribution to the recommendation?
- Are Subject, Purpose and Scope up front and clear? Does the Executive Summary "package" the whole case?
- Does the case compare the baseline to at least 2 alternatives?
- Are assumptions and methods presented to identify benefits and costs?
- Is the cost model organized along a timeline?
- Is the time value of money accounted for?
- Does the case include the important and relevant costs and benefits, even those that are not quantifiable, and are they consistently portrayed across all alternatives?
- Does the case identify and measure sensitivity and risks?
- Does the case discuss critical success factors? What must happen, when, and by who, to achieve expected results?

PBL IMPLEMENTATION MODEL

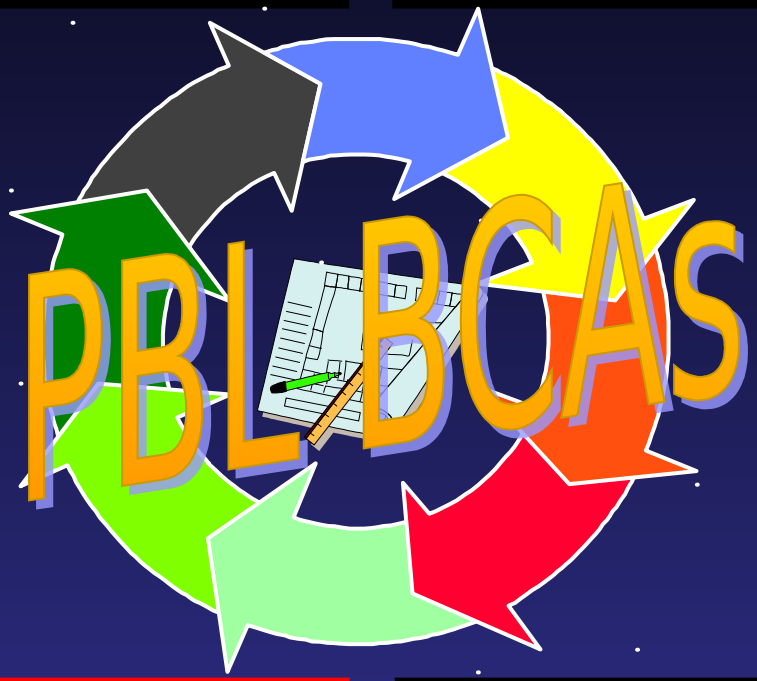
Integrate Requirements & Support

Form the PBL Team

Baseline The System

Identify Performance Outcomes

Implement And Oversight



Select PSI

Financial Enablers

Workload Allocation Strategy

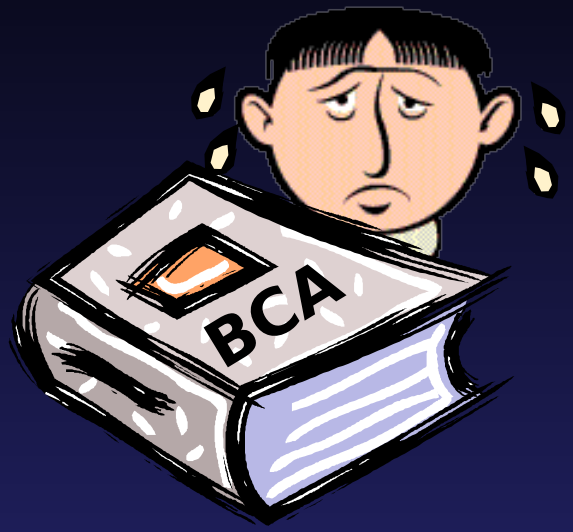
Accomplish Contracts

Business Case Analysis

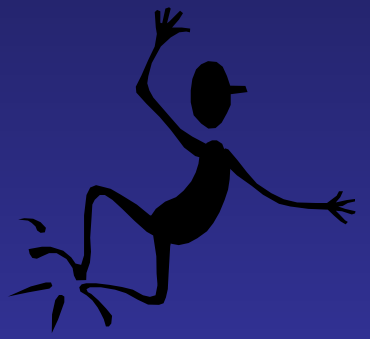
Establish PBAs

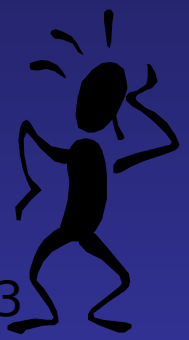
SCM Strategy

PBL BCAs…Are NOT This…



YES PBL? NO





PBL BCAs…

- PBL is policy and DoD's preferred strategy
- Programs should determine, via an initial strategy analysis, their strategy intent; the default strategy is PBL
- The BCA is an (excellent) tool to refine the strategy to determine where, how, by whom, and to what extent support functions can be accomplished in a best value basis
- Are not intended to result in a "yes or no" PBL strategy decision (with rare exceptions)

Common BCA Misconceptions and Observations

- BCAs are NOT intended to make Organic vs. PBL support decisions for Acquisition Programs
- Almost all DoD workloads are a mix of Organic and Commercial support – BCAs find the best 'mix'
- The BCA should not dictate the process, but rather the process generates the BCA; It is a 'documentation' of your analysis
- BCAs will be iterative…i.e. the "first" one may not be accurate or necessarily reflect the final best value recommendations – data quality improves over time!
- BCAs are NOT required to be submitted for Acquisition programs – only accomplis

PBL BCA Key Activities

1. Conduct an initial Strategy Analysis to determine your Product Support Strategy Intent (REMEMBER – PBL is the 'default' strategy!)
2. Determine and Document Warfighter Requirements in a PBA
3. The Product Support Strategy objective is to achieve (or support achievement of) the Warfighter desired outcomes
4. For legacy systems, the existing support infrastructure and costs are the BASELINE --- the PBL workload allocation options are the ALTERNATIVES
   A. Your ALTERNATIVES are NOT:
      1) "all organic" or "all contractor"
      2) "PBL" or "NOT PBL"
   B. But rather "where are the PBL opportunities?"

PBL BCA Key Activities (cont.)

4. For new systems, there may not be a baseline (e.g. possibly the system being replaced), but the various PBL workload allocation options will be the ALTERNATIVES
5. The BCA(s) will address the functional support elements to determine the 'best value' workload assignment, considering:
   a. Cost (baseline vs. alternatives, or alternatives vs. alternatives)
   b. Constraints
      1) Statutory (Title 10 – CORE, 50/50, etc.)
      2) Policy (Contractors on the Battlefield, Access to Tech Data, etc.)
      3) Service Preference (organic performance of 'forward' functions)
   c. Expected Benefits
      a. ROIs, improvements in Availability, Reliability, etc.
6. Recommendations, Rationale, and Implementation POA&M

PBL BCA Recommendations

- FIRST: Develop Your Product Support Strategy!
  - The BCA does not determine your PSS – YOU DETERMINE your PSS, then USE THE BCA to refine it and validate it
- Develop the WBS of Support functions
- Address each in turn…(may be separate BCAs, at first…)
  - Identify constraints (i.e. Core, Service Policies)
  - Identify Infrastructure Capabilities (market research)
  - Identify cost baselines (few for “new” items)
  - Analyze discrete support functions iteratively
- Produce “best value” decisions and document in the BCA(s)
- Not Rocket Science, but rather a disciplined approach and hard work
- Data gathering is 80% of the effort, and most scrutinized
- Assumptions will be necessary – know that going in
- ***YOU DRIVE THE BCA – DON’T LET THE BCA DRIVE YOU!***

PERFORMANCE-BASED LOGISTICS (PBL)

Resources Required
To Complete Business Case Analysis

• Advanced Precision Kill Weapons Systems (APKWS)	$ 225,000
• HELLFIRE II and Longbow HELLFIRE Missiles	$ 338,000
• Guided Multiple Launch Rocket System (GMLRS)	$ 175,000
• M270 Multiple Launch Rocket System (MLRS)	$ 275,000
• M270A1 Multiple Launch Rocket System (MLRS)	$ 350,000
• Army Tactical Missile System (ATACMS)-Quick Reaction Unitary	$ 225,000
• CH-47 Chinook RECAP	$ 350,000
• UH-60M Wide Chord Blades and Multi-Functional Display	$ 150,000
• M1 Abrams DSETS	$ 250,000
• M1 Abrams CEEP LRUs	$ 250,000
• M2/M3 Bradley	$ 285,000
• Objective Individual Combat Weapon (OICW)	$ 900,000
• Land Warrior	$ 180,000
• Joint Biological Point Detection System (JBPDS)	$ 100,000
	$4,053,000

It’s not cheap!

BCA References
Where to Look For Help

- **DAU's PBL Toolkit: https://acc.dau.mil/pbltoolkit**

- Internet Search: Google nets you about 61M hits! (but not much substance!)

- Each Service's PBL Implementation Guide

- Army Economic Analysis Manual, Mar 03, US Army Cost and Economic Analysis Center (CEAC), Feb '01 (Each Service has a Cost Analysis Center/Function)

- Naval Supply Systems Command Business Case Analysis Guidebook for Fleet & Industrial Supply Center Partnerships, Mar '03

- Defense Acquisition University (course) BCF 207; "Economic Analysis"

- Business Case Development Guide…and Template: DAU ACC Log

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Tools

Features

- Call for Papers
- NEW PBL Course being offered a

DAU - LOG 235

- Logistics Terms and Definitions

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Support Strategies

Supportability Strategies and Options

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Developing Effective Weapon System Support Strategies

To *meet the needs of a new National Defense Strategy* that emphasizes global engagement, rapid mobility, small logistics footprint, and inherent reliability, it is critical that the weapon system *Program Manager (PM) develop an efficient, long term support strategy that meets the needs of the warfighter*. To accomplish this, the PM must consider a wide range of factors, including statutes, policy, and guidance, as well as ensuring they utilize the best mix of skills and capabilities from the public and private sectors. This section provides tools, resources, examples, and guidelines to aid the development of effective support strategies.

- PBL
- Logistics Considerations
- Business Case Analysis
- Supportability Analyses
- Support Elements

BCAs

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Tools

What's New
Support Elements
Supportability Analyses